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Effectiveness of Educating Parents of Children with Attention Deficit Hyperactivity Disorder (ADHD) on Children's Behavioral Issues and the Stress Experienced by Parents: An Integrative Review

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Effectiveness of educating parents of children with Attention Deficit Hyperactivity Disorder (ADHD) on children's behavioral issues and the stress experienced by parents: An integrative review

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Abstract

Background: Attention deficit hyperactivity disorder (ADHD) is a common condition characterized by hyperactivity, impulsivity, and inattention. Over 50% of children diagnosed with ADHD experience these symptoms into adulthood. The symptoms of ADHD a child exhibits can be very challenging for parents to manage and their understanding of the child's behavior is often limited. Parenting programs include psychosocial interventions that teach techniques that parents can use to manage their child's challenging behavior. Parent-focused education on managing symptoms for a child with ADHD has been shown to improve quality of life for both parents and child.

Objective: To determine whether parent training programs are effective in reducing parental stress, improving parenting skills to manage their child's behavioral problems, and reducing child's behavioral issues in children ages 4-17 years old diagnosed with ADHD.

Selection Criteria: The type of studies included were randomized controlled trials, non-randomized controlled trials, prospective cohort studies, and analytical cross sectional studies.

Methods: A toolkit was developed and shared with a health care provider working with children and included decision-making resources for parent training. The toolkit was provided to a total of seven families.

Results: Analysis of data collected demonstrated out of the four parents who were unaware of the resources, none attended a program (0%), but all of them were willing to try it out in the future (100%). The rest of the three parents were already aware of the resources with all (100%) attending one of the behavioral intervention programs that resulted in all (100%) displaying reduction of stress and child behavioral issues as well as improvements in skills to manage their child with ADHD.

Conclusion: The review of evidence and the evaluation of the parents who attended parenting programs demonstrated parent training reduced parental stress as well as children's behavioral issues and improved parenting skills to better manage their children.

Keywords

ADHD; parent education; parent stress; systematic review; guidelines

Introduction and Background

ADHD is a neurodevelopmental disorder marked by three core symptoms of hyperactivity, impulsivity, and inattention (National Institute for Health and Clinical Excellence (NICE), 2008). According to a recent systematic review by Thomas, Sanders, Doust, Beller, and Glasziou (2015), the prevalence of ADHD has increased to 7.2% between the years 1977- 2013 which was an increase of almost 2% from 5.3% for the years 1978 – 2005 with the diagnosis added to the *Diagnostic and Statistical Manual of Mental Disorders, 4th ed.* (DSM-IV).

With the latest edition of the DSM-V (APA, 2013), the prevalence is expected to be even higher due to changes in diagnostic criteria. The age of onset criteria in the DSM-IV was 'symptoms must be present before 7 years of age' which has gone up in the DSM-V to being 'before 12 years of age'. Thus, symptoms can now appear up to 5 years later without a requirement of causing impairment. Also, the DSM-V requires meeting symptom criteria that interferes with or reduces the quality of performance in various functioning areas which is less stringent than the requirement of the DSM-IV of having significant impairment in these areas which would increase the number of children diagnosed with ADHD.

Children with ADHD have been found to have significant difficulties at home, school, and other social settings (APA, 2000). They often do not seem to listen when spoken to and have trouble holding attention to and organizing tasks. Additionally, they are unable to relax and often fidget or squirm in a seat. In turn parents often feel stressed, have decreased self-esteem and satisfaction, and believe they are incompetent in parenting their children (Maniadaki, Sonuga-Barke, Kakouros, & Karaba, 2005; Rogers, Wiener, Marton, & Tannock, 2009). Stress exposes parents to negative behavior towards their ADHD child, displaying disapproval and less rewards to their children. (Finzi-Dottan, Triwitz, & Golubchik, 2011). Children diagnosed with ADHD

are at risk for oppositional defiant disorder (ODD), conduct disorder and may display behavioral problems such as anti-social behavior (Dupaul, McGoey, Eckert, & Vanbrakle, 2001; Faraone, Biederman, & Monuteaux, 2002). Moreover, educating parents about the condition has been shown to be efficacious in decreasing parental stress as well as children's behavioral issues (Van Den Hoofdakker et al., 2007).

Problem Statement

The risk of increased behavioral problems in children with ADHD aged 4-17 years has a significant impact on their health and well-being in addition to potentially having consequences for the family unit. Behavioral issues can be manifested as stress, tense relationships with the family and an overall sense of impaired family functioning. Contributing factors to these problems are lack of parental education and unmet needs of parents for information on ADHD.

Review of the Literature

A literature review was conducted using the following databases: PubMed, CINAHL, Cochrane, Joanna Briggs Institute, PsycINFO, EMBASE, and Google Scholar. The keywords used were *ADHD, parent education, parent stress, systematic review,* and *guidelines.* The phase one screening process returned 643 results – PubMed 116, CINAHL 245, Cochrane 110, JBI 29, PsycINFO 125, EMBASE 18. A total of 80 articles including systematic reviews (SR), and meta-analysis (MA) were retrieved after inspecting the title, abstract and the inclusion criteria. After removing duplicates, the resultant 60 articles were screened in phase two and 20 were excluded for their irrelevance to the review. The reference lists of the articles were searched to get an additional 20 articles. Phase three consisted of reviewing an aggregate of 60 full text articles with 34 articles eliminated to include only relevant studies and exclude SRs and MAs. The studies included then were 17 randomized controlled trials, 3 non-randomized controlled studies, 1

prospective cohort study, and 5 cross sectional studies. Overall 26 studies were retained due to their relevance to the topic. The search strategy consisted of published studies only. Studies published in English language(s) only were incorporated in this review. Studies published between January 2001 and March 2016 were considered for inclusion in this review. An extensive search was performed in order to obtain a comprehensive list of relevant articles and to reduce the risk of missing key information while minimizing publication bias. The outcomes evaluated included *negative parenting, parental stress,* and *externalizing child behavior.*

Negative parenting

A report by the United Kingdom Department for Education (2012) identified negative parenting as a failure to adequately supervise children, inconsistent approaches to discipline, and the use of smacking and other punishments. This study found negative parenting was associated with more severe antisocial behavior of child.

Findings in four randomized controlled studies linked behavioral parent training (PT) to positive parenting. PT was found to improve parent ratings of ADHD symptoms and associated behavior problems. Findings included significant reductions in ADHD symptoms including decreasing behavioral and internalizing problems (Abikoff, et al., 2015; Daley & O'Brien, 2013; Ferrin et al., 2013; Van Den Hoofdakker et al., 2007). The behavioral interventions modified parenting practices that included a positive perception of their child's behavior which was reciprocated by improved behavior of children (Montoya, Colom, & Ferrin, 2011).

Matos, Bauermeister, and Bernal (2009) conducted a RCT of 32 families with parent-child interaction therapy which showed an improvement in the confidence that mothers had to be able to manage their child's behaviors. 20 mothers in the intervention group reported 65% reduced symptoms of hyperactivity in their children, while 60% reported decreased aggression

with an overall effect of the average participant being 94% better than those who were in the control group. Although there was a significant reduction in symptoms of children, these children were also taking medication adjunctly which could have altered some of the results.

In another RCT administering the Triple P parenting program as an intervention with 21 families participating, parents reported significant reductions in their children's disruptive behaviors and improvements in parent competence with 77% of parents in the intervention group reporting a reliable change as compared to 14% in the control group. An overall mean satisfaction rating of 6.14 was reported by parents on a 7-point scale, with 7 being the most satisfied. (Hoath & Sanders, 2002).

DuPaul et al. (2001) found statistically significant data ($p = .01$) on parents with ADHD children who displayed more frequent negative behavior towards their children than did parents of normal children. This cross-sectional study compared 58 children with ADHD to 36 normal children. Effect sizes were large (> 0.50) for parent ratings of family functioning and behavior ratings as reported by parents and teachers. It was noted that parents of ADHD children exhibited negative behavior towards their children three time more frequently than the control group.

Parental stress

Parental stress is the negative feelings that parents experience toward self as well as towards children due to demands of parenthood along with dealing with social and environmental circumstances, responsibilities, and everyday life (University of Minnesota Extension, 2015). Parenting demands usually exceed the resources available to them making it more difficult and a hindrance for them to succeed in the parent role.

Many studies measure parental stress by utilizing the parenting stress index (PSI). The PSI is a tool that measures parent stress by focusing on three major areas of stress: child

characteristics, parent characteristics, and situational/demographic life stress (American Psychological Association, 2012). This tool was built to interpret parental stress that could be caused by the child's moods, inflexibility, or other abnormal behavior (Pouretemad, Khooshabi, Roshanbin, & Jaididi., 2009).

Theule, Wiener, Rogers, and Marton (2011) reported parenting stress as a function of the child's ADHD symptoms. The study had a sample size of 95 parents of 8 to 12 year olds with and without ADHD. A regression analysis found this study to have a significant effect of child ADHD symptoms on parental distress ($p= 0.03$). Results presented the possibility of parental stress as the reason for a child's externalizing behavior instead of an inverse relationship between the two variables. Analysis also indicated parents without social support were more disturbed in dealing with their child's ADHD symptoms as these symptoms were correlated to parental stress. Although this study took into account teacher reported ratings, parents reported their own analysis of the situation.

In a RCT of 32 families, parent training was related to a decrease in stress with mothers reporting a mean score of 47.80 out of a maximum of 50 for overall satisfaction with the program (Matos et al., 2009). In a cross-sectional study, Podolski & Nigg (2001) pointed out the distress in parents of 66 ADHD children was related to aggressive child behavior and that severity of ADHD behavior determined the amount of stress for parents in their role. Results of this study indicated maternal distress score as related to child's behavioral problems were at the 76^{th} percentile.

Wolfe and Hirsch (2003) performed two RCTs of 25 and 18 mothers respectively demonstrating in each study that the parent education program, Listening to Children (LTC), boosted the ability of parents to respond to their child's emotional needs. A significant difference

was found in the Parenting Stress Index (PSI) with stress lowered to about 10%. Finzi-Dottan et al. (2011) investigated the role of emotional intelligence in stress in 151 families with and without ADHD children, and deduced, the higher the emotional intelligence parents had, as contributed by situational/economical circumstances, the more stress they were able to cope with. The study recommended having a network of social support to decrease parental stress. This study relied heavily on self-reports of parents and personal growth which could be a subjective experience.

Families of 49 children participated in a non-randomized controlled study that pointed out that life stressors may not be modifiable but effective coping skills training can help parents cope with the stressor. This study utilized adaptive coping strategies in their program to teach both mothers and fathers to cope effectively with behaviors of an ADHD child. In response, children's behavior improved after parents were trained on these skills (McKee, Harvey, Danforth, Ulaszek, & Friedman , 2004).

Stress as perceived by parents is only stress until parents are provided guidance on how to manage their child's problem behavior. Multiple studies have shown that once parents have the knowledge and awareness of managing their child's behavior, their stress is reduced. The vital element in developing a child's socio-emotional relationship with the parent has been the parenting attitude (Levac et al., 2008; McKee et al., 2004; Oh, Park, Suk, Song, & Im, 2012; Pouretemad et al., 2009).

Externalizing child behavior

Reduction in observed ADHD symptoms of the child enhanced family and social functioning of the child with parenting behaviors directly influencing the child's neuropsychological, academic, and social functioning (Montoya et al., 2011; Tarver, Daley, &

Sayal, 2014). The construct of externalizing behavior refers to manifestations in outward behavior reflecting the negativity of the child's behavior on the external environment (Liu, 2004).

Six randomized controlled studies summarized parent training contributed to improved behavior in children (Abikoff et al., 2015; Daley & O'Brien, 2013; Hoath & Sanders, 2002; Jones, Daley, Hutchings, Bywater, & Eames, 2007; Matos et al., 2009; Sonuga-Barke, Daley, Thompson, Laver-Bradbury, & Weeks, 2001) which was observed by reduced externalizing behavior. Tutty, Gephart, and Wurzbacher (2003) conducted a RCT with 100 children who were newly diagnosed with ADHD to evaluate the effectiveness of an 8-week behavior and social skills training on children as well as their parents. The study concluded that the children in the intervention group significantly improved their behavior and social skills in the home setting. A reduction in children's externalizing behavior continued improving even at the one year follow-up.

A RCT of 63 families found a significant difference in all aspects of child behavior post-intervention. Significantly lower levels of child disruptive behavior as well as oppositional defiant behavior towards adults were found post-intervention of the Triple P parenting program with more than 30% reduction in child disruptive behavior (Bor, Sanders, & Markie-Dadds, 2002).

A cross-sectional study conducted by DuPaul et al. (2001) found group differences in behavior ratings between 58 children diagnosed with ADHD and 36 normal children, with the prior group displaying more behavioral problems and were less socially skilled than their counterparts ($p < .01$). This study noted that in situations when there was a lesser attention paid

to children during a situation, children with ADHD did better behaviorally suggesting more noncompliant behavior to escape from parent-directed tasks.

Theoretical Framework

Transactional Model of Stress and Coping

The theory of stress and coping, developed by Lazarus and Folkman (1984) describes stress as an "imbalance between demands and resources". This theory relies on the transaction between people and their external environment (see Appendix A). According to this theory, when people are taught the skills required to cope with the stressor, they reduce their stress levels substantially. Thus, stress is only perceived as stress when one is unable to cope with it. Stress is a process that is analyzed in two parts which include primary appraisal and secondary appraisal. Primary appraisals interpret the stressors as irrelevant, positive, or stressful to the individual's well-being. Risky behavior taken under stress is accounted for under this appraisal. Secondary appraisal deals with an individual's coping strategies and the resources one uses to maintain equilibrium between person and environment. When sufficient resources are available, one is capable of overcoming stress but when one does not have enough supportive resources, stress is experienced. Coping strategies include problem-focused, where the situation can be modified to deal with stress or, emotion-focused, where the changes are made with respect to the situation. The individual then performs a reappraisal of the situation and learns through this process.

Current literature outlines the risk that families carry when placed in stressful situations, emphasizing successful adaptation of stress. Families with children having behavioral problems experience difficulties but many of them are also able to adapt and cope positively (Jones & Passey, 2004; Solem, Christophersen, & Martinussen, 2011). Educating parents has been shown

to help them cope with the stress. In relating to this theory, it has been demonstrated that parents can be taught coping skills to deal with their child's behavior.

Project Design and Methods

This project consisted of two phases. The first phase incorporated the literature review and the second phase included creating and implementing a toolkit. The review considered both experimental and epidemiological study designs including randomized controlled trials, non-randomized controlled trials, quasi-experimental studies, prospective and retrospective cohort studies, case control studies and analytical cross sectional studies for inclusion. The review also considered descriptive epidemiological study designs including case series, individual case reports and descriptive cross sectional studies for inclusion. The search strategy aimed to find published studies only. A three-step search strategy was utilized in this review.

The second phase consisted of developing a toolkit and evaluating effectiveness of parent training programs. The toolkit included information about ADHD, pamphlets with parenting programs, reasons to attend them and the significance and impact of parental education on both parent and child, the National Institute for Children's Health Quality (NICHQ) Vanderbilt Assessment Scale forms for both parent and teacher, and resources that parents can utilize.

Setting and Resources

This was an integrative review that utilized a variety of resources including access to online databases and journals, reference searching, health sciences libraries, contact with librarians, project advisors, and mentor.

Description of the group, population or community

This review considered studies that included children aged 4-17 years diagnosed with ADHD per DSM-IV criteria and their parents who may have experienced any type of stress due

to their child's ADHD related symptoms/behavior. The studies were required to cover some type of parent education/training to be included in the review.

Goals, Objectives, and Expected Outcomes

The goal of this review was to summarize studies that have been carefully designed to include children with ADHD and their parents and provide a high level of evidence on the effectiveness of educating parents so as to make informed recommendations. The objective of the integrative review was to identify the effectiveness of educating parents who have a child aged 4-17 years diagnosed with ADHD on their child's behavioral issues, negative parenting issues and the stress that parents endure. Expected outcomes were measured by decreases in negative parenting, parent stress, and externalizing behavior in children.

Implementation

The second phase of this project comprised of an implementation plan that consisted of providing a toolkit to a pediatric clinic and educating a pediatrician about its contents. The pediatrician, a primary care provider, works at the pediatric clinic with patients requiring varying levels of primary care needs. The clinic also provides care for patients with ADHD. The toolkit included information about ADHD, the significance of this diagnosis, pamphlets with parenting programs, reasons to attend them and the significance and impact of parental education on both parent and child, the National Institute for Children's Health Quality (NICHQ) Vanderbilt Assessment Scale forms for both parent and teacher, and resources that parents can utilize.

Before implementing the toolkit, the pediatrician filled out a pre-test questionnaire of six questions focused on parental motivation and barriers to attending parenting programs (Appendix B). The responses were based on her prior experiences of educating families of ADHD children. On gaining knowledge of the toolkit, the provider educated parents and offered the toolkit to look

at and fill out the NICHQ assessment forms. When educating parents, it was important for the pediatrician to provide the rationale for attending parenting programs, making sure parents understand it was not something that parents were doing wrong, but in fact an experience in which parents could get support to help manage both theirs as well as their child's life in the current situation.

According to the pediatrician, parents did not feel they needed to take parenting classes since they thought they were already doing a good job in raising their child. Barriers faced by parents were that the classes were time consuming and insurance may not cover these classes thus putting the cost on parents. Also, some of the parents themselves suffer from ADHD thus making it difficult for them to manage scheduling for their families. At this stage, the pediatrician was unsure if parents were attending these programs but distinctly replied that as primary care providers they should initiate communication on this topic and motivate parents to attend one of these programs.

The toolkit was distributed over a period of five months spanning from November until March in which a convenience sample was utilized to dispense it to seven families with ADHD children. On follow up in 3 -5 months, the pediatrician ascertained parents' decision on attending the program and the reasoning if not attended. The toolkit was then evaluated using a follow-up questionnaire (Appendix C) for the pediatrician which assessed the effectiveness of parenting programs as assessed by the provider. Specifically, the pediatrician evaluated any improvements in parents' stress levels, their skills in managing their child's condition and consequently, its effect on their child's behavior.

Ethics and Human Subjects Protection

Ethics in research is an important topic that requires careful attention. Ethical norms promote avoidance of errors as well as prohibition of falsifying or misrepresenting research data and plagiarism. Moral and social values also help bring up social responsibility, public health and safety, and human rights. Hence, being ethical in research requires a considerate amount of responsibility.

This review was based on an evidence-based intervention that could be applied to a specific population to improve health care delivery. It was an integrative investigation with the intention of generating recommendations. The review involved interaction with health care providers but did not engage in getting any personal information of subjects. Thus, there were no issues associated with human subjects protection.

Results

The literature review revealed that parenting programs for ADHD children were helpful in relieving parental stress and improving children's disruptive behavior. The toolkit was then provided with resources for parents to help in choosing a parenting program/psychological support to attend. The pediatrician offered the toolkit to parents of seven ADHD children and a follow-up was scheduled in 3-5 mos. The expected outcome was for parents to attend at least one of the parenting programs and experience reduced stress levels with the confidence to better manage their child and consequently, their child would display improved externalizing behavior.

The toolkit contained resources and links to various parenting programs as well as the phone number to behavioral health providers in the area. It also contained information about programs offered by the local Children's hospital. The parenting programs that were offered locally included The Incredible Years Program as well as the Triple P Program that offered an

online option as well. The pediatric clinic was provided with 50 toolkits to be distributed to the parents of ADHD children who were then to be followed up in 3-5 months. An intent to attend any of these programs was to be followed up by parents who were to report back of their plans of attending any one or if they had already attended one.

Seven parents of ADHD children were introduced to the parenting program concept and the pediatrician provided them with the toolkit. From this sample, four parents (57.14%) were not aware of these programs and were glad that such resources were available for them. Parents were provided with the toolkit but they did not disclose any plans to use the resources. On follow-up in 3-5 months, none of them had attended any of the programs, but all of them articulated their interest to do so in the future.

The other three families (42.86%) were familiar with these programs and resources, and were already attending such programs. Of the parents attending one of these programs, two (66.67%) were utilizing psychological counseling support, while one (33.33%) was taking an online parenting program. Of the 42.86% that attended one of these programs, 100% felt more confident in being able to better manage their child's behavior, 100% seemed to experience reduced stress levels pertaining to managing their child, and 100% noticed improved behavior in their child. A post-treatment questionnaire was completed by the pediatrician in five months. The tables below display data for patients and their families seen by the pediatrician.

Table I: ***Total number of families communicated with***

Awareness of resources	**Count**	**% of Total**	**Intention to attend**	**% per group**	**Attended at least one program**	**% per group**	**Intention to attend a program in the future**	**% per group**
Aware	3	42.86%	3	100%	3	100%	NA	
Unaware	4	57.14%	4	100%	0	0%	4	100%
Total	7	100%	7	100%	7	42.86%	4	100%

*NA – Not Applicable

Table II: ***Response of families that attended at least one parenting program***

Response	**Parental confidence in managing child**	**Decreased parental stress**	**Improvement seen in child behavior**
Yes	100%	100%	100%
No	0%	0%	0%

Discussion

Current findings indicate parent-reported improvements in children's behavior after parental stress has been reduced. Parents also reported an ability to better manage their children. This suggests that providing credible and accurate information helps parents make decisions to support parenting skills which can improve parent-child relationships as well as child's behavioral issues. Post-treatment results on a one-year follow-up study of ADHD children in the Incredible Years program demonstrated maintenance of improved children's externalizing behaviors and social contact with peers and reduced mothers' harsh punishment (Webster-Stratton, Reid, & Beauchaine, 2013).

Another finding is for parents who are already aware of resources that can help strengthen their skills allowing them to utilize these to their full extent. On the other hand,

unfamiliarity is a hindrance to parental training and is ground to declining such programs. Hence, staying informed has assisted parents to be mindful of such programs for future use.

Strengths of this review include reviewing 26 studies that spanned over 15 years. Another strength is the fact that the study used the same provider over the given time period to evaluate patients and their parents. This brought consistency to administering the toolkit and the responses received by the child and parents, current patients of the pediatrician. The three families that participated in one of the psychoeducational programs had positive responses to all outcomes. Parents reported reduced stress due to their ability to manage their child appropriately as a result of which children reported less stress and nonchalant behavior. Additionally, the children acknowledged their satisfaction with the resources that were accessible to their parents.

The results of this review are consistent with other studies that have demonstrated the beneficial effects of psychoeducational programs. For example, a review conducted by Pelham & Fabiano (2008) indicated the effect sizes of the behavioral parenting program group were slightly higher than for the group with no interventions, and showed similar effect sizes with other psychosocial treatments, with participant and family, therapist, and treatment characteristics being the moderators that influenced the treatment outcome. Likewise, a randomized controlled study by Van Den Hoofdakker et al. (2007) demonstrated the effectiveness of behavioral parent training in decreasing children's behavioral problems.

ADHD has an unfavorable impact on the entire family unit. The more disruptive a child's behavior, the more effect it has on the parents' emotional state. This can alter parents' behavior which can consequently affect the child's behavior negatively. This review integrated 47 studies to examine the effects of ADHD related behavior and comorbid behavior disorders that can lead to distress for parents and increasing negative behavior towards children.

The literature search supports the positive role of parent training and education for parents and children with ADHD. Analysis of various studies show the significance of positive parenting outcomes that develop in conjunction with measurements of their appropriate use. Considering that parents and providers have pharmacological options, it is important to consider parent training as an additional tool to support the psychological aspect that this condition has on both parents and children. The provider should ensure that the child and family are cognizant of the disorder and the different pharmacological and psychoeducational treatments that are available for this disorder.

Limitations

Despite suggesting parenting programs, many parents do not usually attend these programs. Parents mistake the referrals as being blamed for their child's difficult behavior and think they are being judged. This in turn, diminishes their ability to parent their child and creates low self-esteem among them. Moreover, some parents of ADHD children have the disorder themselves making it hard for them to stay organized and have difficulties remembering tasks that need to be completed. Results of a randomized control trial suggest that even in the context of evidence-based practice, the most important predictor of intervention response is that parents engage actively in their child's treatment (Clarke, Marshall, Mautone, Souffer, Jones, Costigan, Patterson, Jawad, & Power, 2015).

The toolkit provided resources to aid parents gain a better understanding of their child's condition. The pediatrician is a primary care provider who sees patients for a variety of conditions. Since she is not a specialist in mental health, she only has a portion of patients during the day that are seen for ADHD. Even though, she has special slots available for ADHD patients, she does not see these patients every day. Also, patients of the clinic diagnosed with ADHD

usually come in when school is in session and due to the holiday season most patients did not keep their appointments. More than a month was lost without encountering appropriate patients. Hence, this DNP project could only incorporate a small number of patients who were seen and followed up during the five months. The final count constituted of a total of seven ADHD patients and families who were tracked. There was no missing data as all families were accounted for.

Since the project included a small number of participants, it was difficult to generalize the findings to the ADHD children and their parents. 57.14% of the sample did not attend any programs whereas 42.86% participated in some sort of psychoeducational program. The toolkit provided resources to help parents connect to training programs or take an online version to boost their attendance to one of these programs.

The interventions were geared only towards the specific provider's patients and families thus making use of a convenience sample and were evaluated as a package utilizing evidence-based components. This project also relied heavily on the providers report of the parents' experience with their ADHD child thus limiting its source of information.

Conclusion

Parent education has been shown to be an important aspect in the treatment of children with ADHD, benefitting not only the children in this process but also the parents. Research has demonstrated that parents who have received education have decreased stress levels and are better able to manage challenges pertaining to their children. It is important to indicate the potential for early interventions and how specific behavioral training programs for both parent and children are effective in ADHD.

Parent training as a primary care intervention will be determined by the behavioral training programs that are more efficacious as compared to others. Tutty et al. (2003) conducted a study that indicated children's disruptive behavior improved successfully in the home setting after parent training, thus making it possible to hypothesize these children would do well in the school setting, if teachers went through similar training. This review planned on validating information on parental training intervention and presented evidence for providers working with ADHD children and their families. A direction in the future could be to share these parenting outcomes with teachers and school health care providers, thus encouraging them to undergo a similar training.

Parental training interventions are an important part of the treatment of ADHD. Parent training in clinical practice has also been shown to help reduce behavioral problems in children with ADHD. Future research is needed to implement such a study in a larger sample with provision of additional time where the effects of parent training on these outcomes can be observed. Also, performing this study at a time period when children are in session in school would help yield better results.

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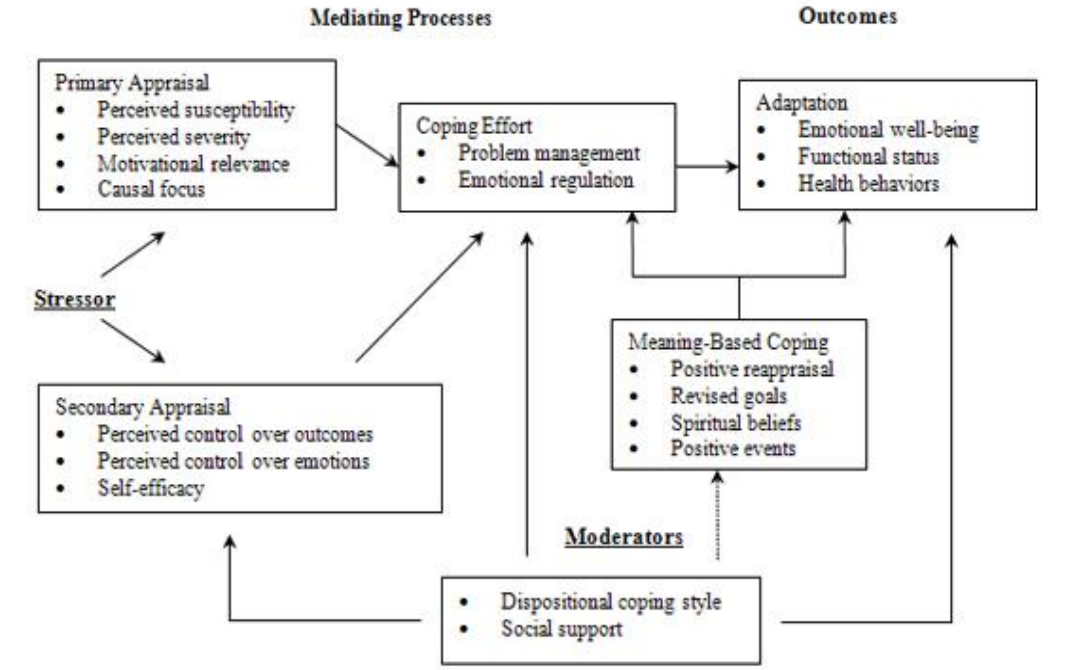
Appendix A

Transactional model of stress and coping

FIGURE 10.1. DIAGRAM OF TRANSACTIONAL MODEL OF STRESS AND COPING.



(Glanz, Rimer, & Viswanath, 2008)

Appendix B

Pre-test questionnaire

1. Have you talked to parents of children with ADHD about parenting programs?
   Yes

2. What has their response been?
   Good

3. If parents are provided with a rationale, will they be motivated enough to attend these education programs?
   Unclear yet

4. Do you think that providers should initiate the process of motivating parents to attend these programs?
   Yes

5. If parents went to parent-training programs, would they feel more confident in being able to manage their child's behavior issues?

   No f/u with families yet to know if they went

6. Why do you think parents hesitate to attend parenting programs?

   They feel they shouldn't need a class and that they are doing a "good enough" job already, it is very time consuming and can be expensive if insurance doesn't cover it, many parents have ADHD too and are not organized enough to manage going to these programs.

Appendix C

Post-test questionnaire

1. Did parents have intentions to use the resources for education provided in the toolkit?

   Parents were happy to receive the information but none of them voiced intention to use the included resources.

2. What are some of the reactions that parents had on gaining knowledge of the resources and parent-training programs available to them?

   Most were happy that resources exist and that one is available on line.

3. If they did use the resources, did they think those were useful?

   Of the parents who received the toolkit and I have had f/u with, none of them have used the resources but think they will be useful if they use them in the future.

4. What were some of the barriers that parents described of being unable to attend a parent-training program?

   Finding the time to do so.

5. For those parents who have attended parent training programs currently or previously,
   i. Have they felt more confident in being able to better manage their child's behavior?
   ii. Do they seem to have reduced stress levels pertaining to managing their child better?
   iii. Have they noticed improved behavior of their child?

   Yes to all of the above and the children are glad the parents have tools to help them.

6. How would you rate parent-training programs for ADHD from your experience as a provider?

   They are great but it continues to be very challenging to get parents to engage in these programs.